

# CA JOURNAL

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## Basis For Aviation Expansion Developed By CAA During 1944

The active participation of the Civil Aeronautics Administration in formulating technical standards for world flying at the International Civil Aviation Conference concludes a year in which the CAA laid the groundwork for a vast expansion of civil flight, Administrator T. P. Wright announces.

"The 300-odd pages of technical documents drafted by the CAA provided the basis for the conference technical discussions, and were praised highly by the foreign delegations," Wright reported.

While reminding the 11,000 CAA employees that their first duty remains the support of the war effort, Wright pointed out that they have ahead of them a key role in facilitating the conversion of the 20 billion dollar aviation industry.

**First Step.**—"Our recommendation for construction of 3,050 new airports and improvement of 1,625 existing fields is probably the first requisite for development of postwar flying on a scale that will result in a market that will utilize any substantial part of today's aircraft production capacity," Wright declared.

Further steps he suggested included simplification of regulations in accordance with many CAA suggestions now before the Civil Aeronautics Board; a \$20,000,000 modernization of CAA radio aids to flying to accommodate increased traffic in all weather; stimulation of aeronautical education and flight training activity by a limited program of federal aid to colleges; and CAA cooperation with manufacturers in development of aircraft that will have broad popular appeal.

**All Time High.**—Reviewing the year's progress in civil aviation, Wright noted that with the return of some planes to the airlines, passenger miles flown by scheduled air carriers rose to an estimated all-time high of 2,202,000,000 miles. Plane loads, however, increased to more than 90% of capacity, compared with 72% in 1942 and 88% in 1943.

As evidence of a gradual shift toward peacetime flying, Wright cited the termination of the CAA War Training Service Program, which had furnished the Army and Navy with 326,816 partially trained pilots from July 1, 1942 to August 5, 1944. By-products of the conclusion of this pro-

gram were the sale of about 5,400 surplus aircraft, disposed of by competitive bidding with an average of eight bidders per plane; and a backlog of private business which has kept former CAA Flight Contractors pressed for help and equipment.

During the year, CAA established a center for testing Army and Navy aircraft for civil airworthiness, in order to assist manufacturers in determining what changes would be necessary to make such planes suitable for commercial use. This CAA Military-Test Base is now located at Augusta, Georgia.

In the field of technical research, CAA announced assistance in the development of reliable and inexpensive stall-warning devices which are expected to eliminate the No. 1 hazard of private flying; successful testing of aerial photography as a means of choosing airport sites; a scientific fabric tester, and perfection of a new type of radio range station which throws out a course signal in all directions.

Experiments in pilot training were carried forward under CAA guidance at the University of Tennessee, Stephens College, and other institutions, with the aid of magnetic wire recorders and specially installed moving picture cameras, which are used to promote uniformity in rating student pilot performance, and to improve flight instruction methods.

Instruction of young men from the other American republics continued under CAA auspices, with a group of 31 pilots in training at Purdue; 44 traffic control and communications technicians at CAA Regional Headquarters, Kansas City, Mo.; and 66 mechanics at Spartan School of Aeronautics, Tulsa.

Foreign operations of CAA generally expanded, with A. S. Koch appointed Assistant Administrator in charge of CAA foreign activities. CAA missions aided pilot

(See *Expansion*, page 12)

## Administrator Urges CAA Aid For Builders Of Private Airplanes

Active cooperation of the Civil Aeronautics Administration with the aeronautical industry in the development of private aircraft as an important postwar project is advocated by T. P. Wright, Administrator of Civil Aeronautics.

Pointing out no government agency is providing an "occasional stimulant to industry in the development of civil aircraft," and quoting the Civil Aeronautics Act of 1938 which charges the CAA with "encouraging and fostering the development of civil aviation and air commerce in the United States and abroad" the Administrator said he believes it appropriate that funds be made available through the CAA for the purpose.

"Although no concrete plans yet have been formulated by the CAA," he said, "such a program is worthy of consideration as a possible means of encouraging improvement in civil aircraft types. This is particularly important in the private owner field where such development is essential to the realization of the potential market. The only Federal agencies actively enabling industry to reach out for the improvements so essential to the military services in time of war, are the National Advisory Committee for Aeronautics, through research and the military services, through development contracts."

**Points CAA Duty.**—"The CAA's duty," Mr. Wright said: "lies not only in increasing the pleasure of the flying public and the effectiveness of the airplane as a private business vehicle but also in furnishing a very important source of business for the aircraft industry to supplement that which has heretofore been furnished largely by the military agencies."

"Estimates have pointed toward the probability of a total licensed personal aircraft field of 400,000 airplanes at the end of ten years after the war. In the attainment of this licensed strength it would be necessary at that time that there be an annual market for this class of airplane of approximately 175,000 aircraft. It should be noted that such a market would mean a business for the industry of about \$350,000,000 a year.

(See *Administrator*, page 9)

# Early Changes In CAR Planned By CAB And CAA Are Announced

Many revisions in the Civil Air Regulations of private and non-scheduled flying will be in force soon, officials of the Civil Aeronautics Board and Civil Aeronautics Administration believe.

Pointing out that a number of important changes have been submitted to the industry for criticism and comment, and the industry's comments have, in many cases, been incorporated into the revised regulations, Jesse W. Lankford, Director of the CAB Safety Bureau, set a deadline of December 30 for final comment prior to action by the Board.

**Get Ready for Boom.**—Lankford and T. P. Wright, Administrator of the CAA, agree new regulations should be put into effect as soon as possible, so when the expected boom in flying comes after the war it may be facilitated instead of hindered.

Modifications in requirements for Pilot Certificates, Non-Air Carrier Operation Rules, and Air Traffic Rules, some of which have been submitted several times before to the industry, will do away with many factors which have deterred the public from flying, but at the same time, will not increase the ever diminishing hazards of air travel.

The most interesting proposal from the pilot's side, is that which would eliminate minimum ceiling requirement under Contact Flight Rules. Until now, the rule has established a 1000-foot ceiling and this has cost the private pilot countless flying hours by keeping him grounded. Pilots have criticized it as a restriction which appears to have little logical connection with safety restrictions.

The suggested changes affecting pilots are as follows:

**Suggests Changes.**—Private Pilot Certificates, Education—A proposed new requirement would be only that pilots be able to read and understand the English language.

**Flight Skill.**—Under the proposed changes, it would no longer be necessary for the Private Pilot to demonstrate ability to enter and complete precision spins. In place of this maneuver, he is required to show ability to control the airplane at minimum flying speed and to recover from all types of stalls. As a student he must have had dual spin instruction.

**Instrument Rating.**—Now the applicant must have logged at least 20 hours of instrument flight time, of which at least 10 must have been actual flight. Under the proposed revision, the applicant must log at least 40 hours of instrument training of which at least 30 must be in actual flight. This change is proposed because of the great increase in traffic under instrument conditions.

**Airworthiness certificates** are affected as follows: Previously, the private owner was required to have an annual inspection of his plane by a CAA inspector to maintain his certificate of airworthiness. It is proposed that the airworthiness certificate shall not expire, but that the owner must have an annual examination by a properly certificated mechanic. This will eliminate one of the difficulties most burdensome to private owners and CAA inspectors alike—that of

arranging itineraries for inspectors which will accommodate owners without delay.

**Logbook Regulation Modified.**—Pilot and plane logbooks are considered under the following: Now pilots are required to log all flights. It is proposed that they record only such flight time as is needed to substantiate experience for certificates and ratings which they seek.

Logbooks for planes have previously been kept for every flight. It is proposed that this requirement be dropped. In view of possible sales of used airplanes, however, it is considered essential to have some positive way of recording the "time" on aircraft and aircraft engines, and the use of a mechanical recorder is being discussed.

**Instrument Flight.**—Now a pilot must have logged at least 2 hours of instrument flight in past 6 months to qualify for instrument flight. It is proposed that this be increased to 6 hours, of which 3 hours may be taken in approved type ground training equipment.

Miscellaneous rules are also involved:

**Air Traffic Rule Aerobatics.**—Now no aerobatic maneuver may be performed under 1500 feet. It is proposed to eliminate this restriction entirely, retaining all other restrictions prohibiting aerobatics over cities, assemblies, in control zones, etc.

**Weather Minimums.**—Now there must be a 1000 foot ceiling for Contact Flight Rule flight. It is proposed that all ceiling restriction be removed. All other rulings to remain as is.

**Miscellaneous.**—Under present regulations all repairs on an airplane must be made by a licensed mechanic. It has been proposed that a private pilot be permitted to make routine minor repairs and perform routine maintenance using proper materials, and following standard procedures.

**Physically Handicapped Pilots.**—Formerly it was necessary for a handicapped (See CAR, page 8)

## Burgess Makes Plea For Uniform Air Laws

The limitless confusion which would result if each State were independently to enact legislation relative to aviation was discussed by George W. Burgess, Assistant to Assistant Secretary of Commerce Burden, in an address before the Council of State Governments in Harrisburg, Pa.

He made special reference to the State Aeronautics Bill, State Airports Bill and the State Airport Zoning Bill in all of which the CAA had a hand in framing.

As evidence of Federal authority over aviation he cited the case of a flier who maintained he had the right to operate a plane without Federal certificate for either himself or plane provided he remained in one state and did not cross a Federal airway. A fine of \$2,500 was imposed by a United States District court setting in Nev.

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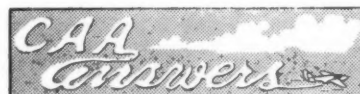
## CIVIL AERONAUTICS JOURNAL

Jesse H. Jones,  
Secretary of Commerce

T. P. Wright,  
Administrator of Civil Aeronautics

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INFORMATION  
AND STATISTICS



Q—(1) Can a man get an (aircraft or aircraft engine) mechanic's certificate while still in the Navy? (2) Will Navy experience be considered? (3) Where and to whom should I apply for certificate? (4) What will I have to do to keep certificate valid? G. C. DuC.

A—(1) Yes. Suggest you get Civil Aeronautics Manual 18. It is for sale at 50c a copy by the Superintendent of Public Documents, Government Printing Office, Washington, D. C. (2) Will Navy experience be considered in application? Yes, provided it was obtained in repair work on airplanes or airplane engines. (3) Time and place of examination may be obtained from CAA Regional manager, 385 Madison av., N. Y. City. (4) Certificate is good for duration if a report is filed each January. Blanks for this purpose may be obtained from the examiner who examines you.

Q—(1) Will independent operators be discouraged in favor of municipal or state operation of airports? (2) What attitude will the Civil Aeronautics Administration assume toward independent operators? (3) Can information be obtained about the location of new airports? R. P. S.

A—Answer to question 1 and 2 is contained in Section 301 of the Civil Aeronautics Act of 1938 which reads: "The Administrator is empowered and directed to encourage and foster the development of civil aeronautics and air commerce in the United States and abroad, and to encourage the establishment of civil airways, landing areas and other air navigation facilities." (3) The CAA has nothing to do with the selection of airport sites or authority over their location except that those chosen must conform to safety regulations and serve the public need.



CIVIL AERONAUTICS JOURNAL

## Uniform State Acts To Regulate Flying Ready For Adoption

Drafts of three bills which, if passed, will establish uniform regulation of aviation in the States are ready for action by the 44 legislatures which will be in session during January and February. The acts are intended to facilitate harmony in action and accord in procedure, essential to the development of peacetime aviation.

The proposed legislative program consists of the State Aeronautical Department Act, State Airports Act and the State Airport Zoning Act.

**Will Prevent Conflict and Confusion.**—All who have worked on them agree that the adoption of these uniform laws will provide the authority and machinery to permit the States and their political subdivisions to play appropriate parts in the development of aviation, and avoid the state-federal conflicts in safety regulation and enforcement that have plagued other forms of transportation.

Another state aeronautical bill, proposed by the National Association of Railroad and Utility Commissions, has been termed "objectionable" by T. P. Wright, Administrator of the Civil Aeronautics Administration, on the ground its provisions would be "extremely burdensome to both interstate air commerce and charter flying," and the proposed legislation appears unnecessary and therefore undesirable.

This bill would subject all air carriers, both scheduled and non-scheduled, operating either over regular routes or on a charter basis, to detailed economic regulation by the state public utility commission, a feature not present in any of the three proposed acts.

The State Aeronautical Department Act and the State Airports Act were drafted by the National Association of State Aviation Officials, and the Model State Airport Zoning Act by the National Institute of Municipal Law Officers. All were framed after consultation with CAA officials, and all have been approved by the NASAO, the Council of State Governments, and have general CAA endorsement.

**Model Zoning Act Important.**—Of especial importance in view of the inevitable increase in airports, is the suggested model zoning act. This is the fifth to be drafted and recommended by the National Institute of Municipal Law Officers, the CAA or both. It is a revision of the act of 1941 which incorporates recommendations made at a conference held by the CAA in Washington in September, attended by city attorneys, representatives of the Council of State Governments and other experts in zoning and constitutional law. The CAA and the NIMLO recommend that this model act by adopted by all states and Territories which now lack such legislation and that the existing airport zoning laws of 12 states and the Territory of Alaska which are patterned upon earlier model acts be amended to conform.

Perhaps the most important of these legislative proposals, however, is the State Aeronautic Department Act. This model act could resolve a variety of conflicting state provisions for handling aviation matters. Most of the states now have an agency of the state gov-

(See *State Acts*, page 11)

## CAA Regional Managers Meet



Left to right, standing, Howard A. Hook, Sixth; John E. Sommers, Assistant Administrator; Marshall C. Hoppin, Eighth; William E. Kline, Fifth; John E. Beardslee, Ninth; William M. Robertson, Second; and Charles I. Stanton, Deputy Administrator in direct charge of the regional offices. Seated, Oren D. Harwood, First; Al S. Koch, Assistant Administrator for Foreign Operations; H. R. Neely, Third; L. C. Elliott, Fourth; Paul R. Morris, Seventh; William A. M. Burden, Assistant Secretary of Commerce; and Administrator T. P. Wright.

## Discuss Ways To Increase Private Flying

Coordination of postwar operations of the Civil Aeronautics Administration to encourage private flying as well as facilitate commercial transportation was accomplished at a recent meeting of CAA regional managers with Administrator T. P. Wright in Washington.

This was the first complete assemblage of regional managers with the Administrator and included the head of the recently established Ninth or Pacific Islands region with headquarters at Honolulu.

## Transport Planes May Be Truck For Farmer

The Department of Agriculture suggests use of C-47 and C-54A planes for the transportation of farm produce to existing markets and as aids in developing others.

The November Marketing and Transportation Situation, issued by the Bureau of Economics of the Department, comments: "Agriculture is interested in air transportation as a more efficient method of moving farm products to market and as a way of opening new markets for post-war surpluses of perishable agricultural commodities.

"Any freight airline beginning operations within the next few years might utilize surplus war transport ships of the type of the C-47 and the C-54A. By the end of 1945, it has been officially estimated, about 15,000 planes suitable for hauling cargo will be owned by the Government.

"The freight airline can readily use ships that have been in active military service two or three years. These ships may be disposed of to airline operators at a low yearly value times expected years of economic life" as provided for in the report on surplus aircraft disposal. Ships so purchased probably could be operated over a period of five years or more at very low amortized capital cost. Quantities of surplus parts also may be available under certain conditions.

"A large number of demobilized Army and Navy personnel probably will be available."

## CAB Eases Rules For Military Pilots

A rated military pilot, either in active service; honorably discharged or returned to inactive service, may obtain a certificate by passing a written examination on Parts 20 and 60 of Civil Air Regulations under an amendment to 20.129 adopted by the Civil Aeronautics Board.

The amendment reads: "20.1290 Pilot certificate. An applicant who is, or was within the preceding 12 calendar months, a member of the armed forces of the United States and has served on solo flying status for a period of 6 consecutive months shall be deemed to have met the aeronautical knowledge, experience, and skill requirements of the C. A. R. for the issuance of a pilot certificate appropriate to the military pilot rating held: provided he submits documentary evidence showing he is, or was, a rated military pilot, and his total solo flying time.

20.1291 Aircraft ratings. Type, class, and horsepower ratings will be issued in connection with such pilot certificates or in connection with a private or commercial pilot certificate held by the applicant, if he presents reliable documentary evidence showing that within the preceding 12 calendar months he has had at least 10 hours of flying time during which he was sole manipulator of the controls of aircraft of the type, class, and horsepower for which a rating is sought.



**Three Die in Crash.**—Norval D. Norton, a CAA Senior Aeronautical Inspector stationed at Buffalo, N. Y., his wife and their 10-year old daughter, were fatally injured when an aircraft piloted by Norton struck the ground at high speed near Perry, N. Y., while flying through a heavy rainstorm.

Norton, 38, of Snyder, N. Y., held a commercial certificate with all aircraft ratings, and had accumulated 3,264 hours of flying time. The aircraft, owned by the Civil Aeronautics Administration, was demolished. It was equipped with two-way radio and instruments necessary for instrument flight.

Evidence indicates that at the time of the accident Norton was attempting to determine his position by circling low over a rotating beacon and encountered rain of such intensity that visibility was restricted to a point where contact flight was impossible.

**Propeller Blade Drops Off.**—Failure of a propeller blade in the air, followed by fire, resulted in an accident near the Municipal Airport, Middletown, Ohio, in which the pilot, Robert H. Reece, 35, of Overland, Missouri, suffered serious burns. The aircraft was destroyed by impact and fire.

Reece holds a commercial certificate with single-engine land, flight instructor and instrument ratings, and had accumulated 2000 hours of flying time.

Investigation disclosed that one blade of the propeller had failed in the attachment between the steel retention and the wooden blade. The failure was caused by separation of the glued joint between the front or camber section and the center plywood section. Evidence indicated that when the blade came off the engine vibrated so violently that the motor mount failed in flight, causing the exhaust manifold and fuel lines to break or separate which allowed gasoline to come in contact with exhaust flames.

**Caught in Downdrafts.**—While flying low over rough terrain in mountains near Elko, Nev., Pilot Floyd W. Swett encountered turbulent air and crashed, resulting in fatal injuries to himself and minor injuries to his passenger, Gerald F. Trescartes.

Swett, 35, of Elko, held a commercial certificate and flight instructor ratings. He had accumulated 2257 hours of flying time, most of which had been obtained in the Elko area. He was making the flight under contract for the U. S. Grazing Service of the department of Interior.

Trescartes said there was no malfunctioning of the aircraft and that Swett had dived to gain speed. A pilot, who spotted the wreckage from the air, stated that he encountered several heavy downdrafts and had considerable difficulty in climbing.

The probable cause was the pilot's inability to avoid colliding with mountainous terrain while attempting to turn back in a canyon in turbulent air.

**Father and Son Injured.**—Following engine stoppage soon after take-off, Instructor Irving D. Wainwright tried to turn back to the airport, and crashed in a cornfield, with the result that he was critically injured and his son, Jack T. Wainwright, a student pilot, was slightly injured. The accident occurred at the Municipal Airport, Alexandria, La.

Instructor Wainwright, 47, Pineville, La.,

held a commercial certificate with single-engine land, and flight instructor ratings. He had flown a total of 2129 hours, including about 35 hours in the aircraft involved. His son, 20, had received several hours dual instruction and had not soloed. The aircraft was a Fleet 9. The engine log indicated total engine time of 2558 hours, of which 59 hours had been flown since the last major overhaul. About 35 hours had been put on the engine since the last 20-hour check.

The probable cause of this accident was a stall out of a turn at an altitude too low to effect recovery, following engine failure.

**Fatal Spin.**—Walter D. Burgwin of Camp Wolters, Tex., was fatally injured in an accident which occurred near Mineral Wells, Texas.

Burgwin, 35, held a student pilot certificate and had accumulated about 200 solo hours.

The airplane was in a steep climb when it was stalled and entered a right spin. A witness said the spin was stopped at about 50 feet from the ground, but the plane continued downward until it crashed in a nearly vertical attitude.

The probable cause of the accident was failure to effect recovery from a spin while indulging in reckless maneuvers at a dangerously low altitude.

**Falls Into River.**—While flying along the Susquehanna River at an altitude below the tops of the trees, Student Pilot Robert J. Little, 32, of Whitney Point, N. Y., struck 2200-volt power wires near Binghamton, N. Y., and crashed into the water. He was seriously injured.

Little had accumulated 22 hours solo flying time, including 20 hours in the type aircraft involved and five or six hours within the 90 days preceding the accident.

The probable cause of this accident was failure to avoid wires while flying at a recklessly low altitude.

**Injured by Propeller.**—George McIntosh of Yonkers, N. Y., was seriously injured by a propeller as he was pulling it through to start an engine at Stormville Airport, Stormville, N. Y.

McIntosh, 36, held an aircraft and engine mechanic certificate and had approximately ten year's experience as an assistant mechanic. The pilot handling the engine controls in the cockpit was Marinus Kock, 39, of Yonkers. He held a commercial certificate with single-engine land, and flight instructor ratings and had accumulated 1150 hours of flying time. The aircraft was a Myers OTW.

The probable cause of the accident was error of the mechanic in standing too close to the propeller while attempting to start the engine.

**Trapped in Pass.**—After entering a high a high mountain pass 12 miles south of Coleville, Calif., Pilot Patrick W. Engel, 29, of Bishop, Calif., could not gain enough altitude to go ahead. He attempted to turn back and in doing so struck a tree. The crash resulted in fatal injuries to the pilot and in minor injuries to his brother, Harley L. Engel, of Visalia, Calif.

Pilot Engel held a commercial certificate and flight instructor ratings. He had more than 2400 hours of flying time,

**Wing Drops Off.**—Loss of a wing while on a cross-country flight cost the life of Pilot Bradnor Cecil Mott and his passenger, Mrs. Victor Fite, in an accident near Laytonville. Mott held a commercial pilot certificate and flight instructor ratings. He had been employed about one year by the Riddle-McKay Company as a flight instructor and had logged approximately 900 hours. Mrs. Fite was not certificated as a pilot.

The probable cause of this accident was wing failure due to causes unknown while flying in instrument weather.

**Pilot and Student Killed.**—A spin resulted in a crash and fatal injuries to Instructor George Elmer Wicker, 30, and Student Earl Craig, 42, both of Decatur, Ill., five miles northeast of the Decatur Airport.

Wicker held a commercial certificate and flight instructor ratings, and had accumulated about 1800 flying hours. Craig was not certificated as an airman.

Although Wicker was considered by his associates to have been a cautious pilot, he was far from cautious on the day of the accident, as indicated by his reckless flying at low altitudes.

The probable cause of this accident was failure to recover from a spin in an aircraft placarded against such a maneuver.

**6 Killed in Alaska Crash.**—While proceeding under contact flight rules over snow-covered terrain which made visibility uncertain, a Pan American Airways plane on a scheduled flight from Nome to Fairbanks, Alaska, crashed approximately 10 miles east of the CAA Field at Nome. All occupants, including the pilot, two crew members and three passengers, were fatally injured and the aircraft was demolished.

Captain Robert Leslie Bullis of Yakima, Wash., the pilot, held an airline transport certificate with land and sea, and flight instructor ratings. He had logged about 3477 hours. He had flown on the Nome run since August 1943 and had made seven flights to Nome as captain.

Fred Moller of Fairbanks, described in the Pan American clearance as first officer, actually served as flight mechanic and radio operator on this flight. He held an aircraft and engine mechanic certificate.

The third member of the crew, Theodore S. Selteneich of Fairbanks, was on the flight for route familiarization. He held an aircraft and engine mechanic certificate.

The probable cause of this accident was failure of the pilot to recognize his proximity to the ground due to heavy snow which entirely covered the terrain.

**Stalls at Take-Off.**—A stall following take-off resulted in an accident at Mio Airport, Mio, Mich., in which the pilot, Donald Edward Chandler of Jackson, Mich., was seriously injured and the aircraft was demolished. The two passengers, George F. Marsh and Lewis L. Smith of Mio, sustained minor injuries.

Chandler held a commercial pilot certificate and had flown approximately 303 solo hours. Marsh and Smith were not certificated as airmen.

The aircraft, although fully loaded, was within its allowable limits.

## CAA Studies New Field For Returned War Fliers

### Fighters May Strafe Foes Of The Farmer

From dive bombing and strafing to crop seeding and dusting. This is one way, suggested by the Civil Aeronautics Administration, for mustered-out Service pilots to use their war-won experience in peacetime pursuits.

Openings in aerial agriculture will overshadow, it is believed, opportunities as airline pilot or civilian instructor, and tasks which the "flying farmer" can perform appear to be limited only by the ingenuity and resourcefulness of the individual.

The Commercial Operations Section of the Safety Regulation Service, with Lake Littlejohn as Chief, is working and planning now for an expected boom.

**Big Opportunities.**—Although prewar aerial crop-dusting was, except in a few notable instances, unreliable and slipshod, with little effort spent in building a permanent business, it is possible that postwar aerial aid to the farmer, fruit-grower, and rancher will become a tremendous industry. This, in turn, will demand proper, perhaps especially-designed, equipment, careful maintenance, and thorough reliability from the operators.

More than twenty years of experimental spreading of germicides, larvacides, and different seeds by airplanes, has developed mathematical proof that this work can be done more cheaply, more evenly, with much better all around results, and with a striking saving of time when time is valuable, or even vitally necessary to save a crop.

All types of range grasses, alfalfa, wheat, oats, and rice have been experimentally seeded by air. The story of rice is typical. Before aerial seeding, rice was dry seeded, and later the field was flooded. Birds followed the drills, gobbling the seed. Later, migrating ducks and geese pastured on the growing rice.

**Rice Seeding Technique.**—First attempts at rice seeding from the air were not satisfactory. Dry seeds were dropped on flooded areas, and they floated away, to lodge in winrows at margins or sank in masses with the result the field was never evenly planted. Pre-soaking the seeds gave them sufficient weight to sink immediately and now more than 80% of California's 130,000 acres of rice fields are sown in this way.

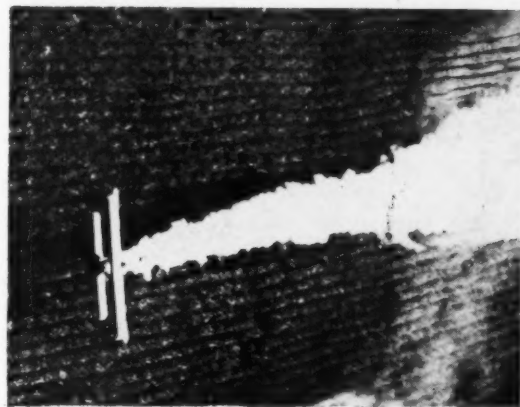
Seeding of range land, often in mountainous terrain which prevents using any ground machinery, is another task taken over by the airplane. Land which has been once grazed, or burned out, was once considered lost for good. Now, the aerial seeder replenishes the crop in a few hours, the rains come, and the land is reclaimed to fatten millions of pounds of beef, lamb, horses, and wild game.

Man's continual war against the insects will become almost entirely a battle from the sky. Speed again, and economy of operation, demand that the skyhorse take over where the old methods are too slow. For when pestilence appears, speed of counteraction is all important. With each dusting plane covering 300-500 acres a day, the crop destroyer, whether bug or blight is soon beaten.

The powerful new insecticide, known as "D.D.T.", developed by the Army, will take the place of the bulky paris green, soap-



South Dakota has fewer coyotes now that Edison Ward and Tony Engelburt are back from a successful hunting trip which will pay big dividends in bounties on the cargo of pelts on their fur-bearing airplane. Dusting cotton, as protection from boll weevil is but one of many services the returned fliers will perform for the farmer.



stone mixture. A quarter pound of the powder in the proper solution will destroy all breeding spots for mosquitos in an acre. It is not yet released for civilian use, but when it is, the aerial mosquito patrol will make short work of disease spreading mosquitos.

The larger fruit and vegetable producers have learned the least expensive, and most effective way to dust their plants and trees is by air. The truck farmer has learned that the whirling motion applied to poisonous dust by the propeller blast, drives the dust under the plants to the bottom sides of the

leaves where most predatory insects feed. Thus, plane spraying is more effective than any other method.

Much of this agricultural pest control flying is highly specialized, demands split-second precision at low, dangerous altitudes. However, there will be no enemy guns to contend with, and veteran pilots will enjoy the work.

**Killing Animal Pests.**—The hunting of coyotes by air has been an exciting, and dramatic enterprise for several years, and has proven the most efficient way to destroy  
(See *Fighters*, page 8)

# DOMESTIC AIR CARRIER STATISTICS

## Operations for November 1944

Operator and routes	Revenue miles flown	Revenue passengers carried	Revenue passenger miles flown	Express carried (pounds)	Express pound-miles flown	Passenger seat-miles flown	Revenue passenger load factor (per cent)
<b>All American Aviation, Inc.</b> ..... <b>Total</b>	<b>118,029</b>	<b>0</b>	<b>0</b>	<b>13,058</b>	<b>2,281,320</b>	<b>0</b>	
Pittsburgh-Huntington, Jamestown, Williamsport, Harrisburg, Washington							
<b>American Airlines, Inc.</b> ..... <b>Total</b>	<b>3,341,996</b>	<b>85,654</b>	<b>53,118,435</b>	<b>2,114,610</b>	<b>1,037,593,399</b>	<b>60,420,021</b>	<b>87.92</b>
Dallas-Los Angeles	1,090,973	20,416	18,096,953	244,117	244,902,051	19,888,044	90.99
New York-Chicago	537,229	20,314	7,788,389	771,215	343,914,465	8,808,468	87.82
Boston-New York	183,274	17,315	3,047,907	314,878	48,129,466	3,712,413	82.10
Syracuse-Cleveland	16,324	1,559	236,653	40,908	7,213,036	316,001	74.89
Cleveland-Nashville	61,087	4,683	1,085,798	100,044	26,465,938	1,243,051	87.35
New York-Fort Worth	931,775	25,953	14,775,579	391,318	238,774,210	16,622,426	88.89
Washington-Chicago	163,208	5,998	2,522,507	125,539	49,087,737	2,957,696	85.29
Chicago-Fort Worth	176,059	6,623	2,986,320	82,023	50,224,593	3,456,551	86.40
Buffalo-Toronto	3,648	784	59,584	2,778	211,128	74,556	79.92
El Paso or Fort Worth-Mexico City	178,419	2,853	2,518,745	41,790	28,670,175	3,280,815	76.77
<b>Branniff Airways, Inc.</b> ..... <b>Total</b>	<b>561,932</b>	<b>23,053</b>	<b>9,731,047</b>	<b>162,022</b>	<b>82,274,089</b>	<b>11,285,116</b>	<b>86.23</b>
Chicago-Dallas	328,826	11,023	5,873,944	118,612	71,027,831	6,407,323	91.68
Denver-Brownsville	200,893	11,985	3,433,164	38,933	10,382,345	4,204,569	81.65
San Antonio-Laredo	32,213	2,430	423,939	4,477	863,913	673,224	62.97
<b>Chicago &amp; Southern Air Lines, Inc.</b> ..... <b>Total</b>	<b>346,199</b>	<b>11,582</b>	<b>5,538,455</b>	<b>113,317</b>	<b>47,749,928</b>	<b>7,265,818</b>	<b>76.23</b>
Chicago-New Orleans	286,040	10,326	4,569,040	95,184	41,139,121	6,029,883	75.77
Memphis-Houston	60,159	2,229	969,415	18,133	6,610,807	1,235,955	78.44
<b>Continental Air Lines, Inc.</b> ..... <b>Total</b>	<b>217,477</b>	<b>6,100</b>	<b>2,216,521</b>	<b>21,911</b>	<b>9,195,894</b>	<b>2,468,771</b>	<b>89.78</b>
Denver-El Paso-San Antonio	147,940	4,244	1,520,344	13,686	5,913,549	1,697,515	89.56
Denver-Tulsa	37,403	1,729	389,764	3,729	804,487	430,237	90.59
Denver-Kansas City	32,134	627	306,413	4,496	2,477,858	341,019	89.85
<b>Delta Air Corporation</b> ..... <b>Total</b>	<b>377,100</b>	<b>17,074</b>	<b>6,901,680</b>	<b>86,339</b>	<b>32,564,690</b>	<b>7,799,130</b>	<b>88.49</b>
Charleston or Savannah-Fort Worth	309,083	13,545	5,690,457	51,224	21,671,470	6,402,439	88.88
Atlanta-Cincinnati	68,017	3,791	1,211,223	35,115	10,893,220	1,396,691	86.72
<b>Eastern Air Lines, Inc.</b> ..... <b>Total</b>	<b>1,771,824</b>	<b>56,118</b>	<b>29,475,351</b>	<b>618,417</b>	<b>335,337,728</b>	<b>34,912,012</b>	<b>88.43</b>
New York-San Antonio or Brownsville	556,940	19,789	18,846,929	183,484	123,068,946	12,931,409	83.88
New York-Miami	717,732	20,525	9,865,400	210,324	125,215,108	12,135,415	81.29
Chicago-Jacksonville	207,264	13,403	5,641,582	178,589	63,345,297	6,154,988	91.66
Atlanta-Tampa	120,061	3,527	1,523,876	8,163	5,990,519	1,815,425	83.94
Washington-St. Louis	79,827	3,570	1,597,564	37,847	19,717,858	1,874,775	85.21
<b>Inland Air Lines, Inc.</b> ..... <b>Total</b>	<b>126,263</b>	<b>2,987</b>	<b>911,355</b>	<b>7,423</b>	<b>1,658,805</b>	<b>1,447,392</b>	<b>62.97</b>
Denver-Great Falls	94,754	2,782	830,231	7,235	1,610,088	1,284,041	64.66
Cheyenne-Huron	25,509	205	81,124	188	48,717	163,351	49.66
<b>Mid-Continent Airlines, Inc.</b> ..... <b>Total</b>	<b>197,838</b>	<b>6,483</b>	<b>1,850,930</b>	<b>25,554</b>	<b>7,776,015</b>	<b>2,270,957</b>	<b>81.54</b>
Minneapolis-Tulsa	143,927	4,706	1,353,742	21,596	6,692,917	1,627,015	81.93
Minneapolis-Des Moines-St. Louis or Kansas City	53,911	1,847	517,188	3,958	1,083,098	642,142	80.54
<b>National Airlines, Inc.</b> ..... <b>Total</b>	<b>389,443</b>	<b>10,909</b>	<b>4,688,276</b>	<b>30,753</b>	<b>11,161,517</b>	<b>5,299,999</b>	<b>88.46</b>
New York-Key West via Miami	232,329	7,076	2,766,659	12,065	5,259,440	3,144,678	87.98
Jacksonville-New Orleans	157,114	5,273	1,921,617	18,688	5,902,077	2,155,321	89.16
<b>Northeast Airlines, Inc.</b> ..... <b>Total</b>	<b>94,542</b>	<b>5,031</b>	<b>1,111,088</b>	<b>16,279</b>	<b>3,352,204</b>	<b>2,078,334</b>	<b>53.46</b>
Boston-Presque Isle and Moncton							
<b>Northwest Airlines, Inc.</b> ..... <b>Total</b>	<b>733,047</b>	<b>18,673</b>	<b>11,169,140</b>	<b>228,710</b>	<b>126,220,516</b>	<b>14,075,549</b>	<b>79.35</b>
Chicago-Twin Cities-Seattle; Fargo-Winnipeg	729,591	18,673	11,169,140	228,384	126,177,158	14,075,549	79.35
Minneapolis-Duluth	3,456	0	0	326	43,358	0	
<b>Pennsylvania Central Airlines Corporation</b> ..... <b>Total</b>	<b>580,363</b>	<b>42,985</b>	<b>9,302,588</b>	<b>466,621</b>	<b>85,815,702</b>	<b>11,909,185</b>	<b>78.11</b>
Norfolk-Detroit	407,798	33,366	6,706,816	345,651	59,404,115	8,550,013	80.23
Detroit-Milwaukee or Chicago	79,576	7,437	1,280,029	82,065	14,151,563	1,650,637	77.55
Pittsburgh-Buffalo	23,207	1,456	278,108	9,998	1,861,958	463,011	59.81
Pittsburgh-Birmingham	69,782	3,058	1,037,635	28,907	10,408,066	1,434,524	72.33
<b>Transcontinental &amp; Western Air, Inc.</b> ..... <b>Total</b>	<b>1,975,342</b>	<b>35,860</b>	<b>31,396,283</b>	<b>1,216,344</b>	<b>607,566,946</b>	<b>35,063,503</b>	<b>89.54</b>
New York-Los Angeles	1,274,673	28,788	20,723,691	659,993	401,056,054	22,963,528	90.25
Dayton-Chicago	50,075	3,622	855,636	100,236	22,604,733	859,104	99.60
Boulder City-San Francisco	114,772	5,024	1,997,650	24,917	11,139,721	2,203,911	90.64
Kansas City-Pittsburgh via Chicago	380,147	10,168	5,413,610	282,061	143,375,926	6,067,875	89.22
St. Louis-Detroit via Cincinnati and Dayton	62,920	4,262	990,679	99,173	14,930,063	1,259,677	78.65
Washington-Dayton via Columbus	86,755	4,162	1,415,017	49,964	14,460,449	1,709,408	82.78
<b>United Air Lines, Inc.</b> ..... <b>Total</b>	<b>2,767,882</b>	<b>56,248</b>	<b>40,340,111</b>	<b>1,048,127</b>	<b>941,597,148</b>	<b>42,705,601</b>	<b>94.46</b>
New York-San Francisco	2,110,900	28,675	27,981,193	823,608	837,266,743	29,616,974	94.48
Salt Lake City-Seattle	140,190	4,103	2,703,472	62,780	36,399,658	3,002,810	90.03
Seattle-San Diego	441,100	20,355	8,240,722	144,485	62,240,750	8,540,870	96.49
Seattle-Vancouver	10,919	1,387	181,926	4,121	514,125	223,863	81.26
Washington-Toledo	64,773	1,728	1,232,798	13,133	5,175,872	1,321,054	93.32
<b>Western Air Lines, Inc.</b> ..... <b>Total</b>	<b>348,745</b>	<b>12,855</b>	<b>5,837,919</b>	<b>72,714</b>	<b>32,149,389</b>	<b>6,762,510</b>	<b>86.33</b>
San Diego-Salt Lake City	188,584	6,242	3,363,684	48,646	24,377,360	3,631,502	92.63
Salt Lake City-Great Falls	48,884	1,568	586,061	2,944	749,469	1,005,470	58.29
Great Falls-Lethbridge	8,416	529	76,137	438	61,900	160,693	47.38
Los Angeles-San Francisco	102,861	4,994	1,812,037	20,686	6,930,660	1,964,845	92.22
<b>Total</b> .....	<b>13,942,022</b>	<b>391,612</b>	<b>213,589,179</b>	<b>6,242,199</b>	<b>3,364,295,290</b>	<b>245,762,998</b>	<b>86.91</b>
<b>Colonial Airlines, Inc.</b> ..... <b>Total</b>	<b>104,298</b>	<b>4,787</b>	<b>1,483,992</b>	<b>28,944</b>	<b>8,924,790</b>	<b>2,190,258</b>	<b>67.75</b>
New York-Montreal							
<b>Hawaiian Airlines, Ltd.</b> ..... <b>Total</b>	<b>82,665</b>	<b>9,311</b>	<b>1,344,975</b>	<b>607,476</b>	<b>94,999,997</b>	<b>1,480,104</b>	<b>90.87</b>
Honolulu-Hilo and Port Allen							
<b>Grand Total</b> .....	<b>14,128,985</b>	<b>405,710</b>	<b>216,418,146</b>	<b>6,878,619</b>	<b>3,468,220,077</b>	<b>249,433,360</b>	<b>86.76</b>

\* The total passengers carried for each airline is an unduplicated figure with the exception of United whose unduplicated figure was not available.



# Operations for First 11 Months of 1944 Compared with Same Period of 1943

Operator	Revenue miles flown January-November		Revenue passengers carried (unduplicated) <sup>1</sup> January-November		Revenue passenger miles flown January-November	
	1944	1943	1944	1943	1944	1943
All American Aviation, Inc.	1,121,105	946,243	0	0	0	0
American Airlines, Inc.	31,278,980	24,189,569	847,969	728,828	519,787,616	401,894,595
Brantiff Airways, Inc.	4,849,651	3,707,193	203,243	141,703	85,712,817	60,943,404
Chicago & Southern Air Lines, Inc.	2,616,924	2,010,646	96,095	75,986	45,242,427	32,568,143
Continental Air Lines, Inc.	2,139,004	2,417,485	60,876	43,556	21,501,133	13,792,581
Delta Air Corporation	3,156,358	2,114,861	149,735	100,190	59,676,551	39,200,367
Eastern Air Lines, Inc.	15,550,873	12,121,231	436,171	343,609	241,367,911	197,577,724
Inland Air Lines, Inc.	1,098,259	775,541	20,576	11,339	6,533,183	3,661,021
Mid-Continent Airlines, Inc.	2,053,133	1,318,807	68,295	33,785	19,607,963	9,434,398
National Airlines, Inc.	3,011,142	1,732,894	103,258	59,405	36,186,345	20,793,014
Northeast Airlines, Inc.	917,000	647,295	48,493	32,922	11,702,284	8,216,887
Northwest Airlines, Inc.	6,645,492	4,006,423	165,290	84,166	108,783,282	56,863,228
Pennsylvania-Central Airlines Corporation	4,784,643	2,805,716	377,225	213,486	82,505,105	47,458,026
Transcontinental & Western Air, Inc.	19,697,952	14,802,223	363,762	300,259	320,005,814	223,926,846
United Air Lines, Inc.	26,855,862	19,899,576	486,827	393,122	417,531,557	325,460,407
Western Air Lines, Inc.	2,807,220	1,864,238	108,344	69,532	50,736,423	29,597,924
Total	128,583,598	94,449,941	3,536,159	2,631,888	2,026,880,411	1,471,388,565
Index (1943 = 100)	136.14	100.00	134.36	100.00	137.75	100.00
Colonial Airlines, Inc.	946,162	630,254	51,260	33,940	15,894,016	10,055,894
Hawaiian Airlines, Ltd.	863,091	831,504	100,209	99,212	14,401,768	14,093,370
Grand Total	130,392,851	95,911,699	3,687,628	2,765,040	2,057,176,195	1,495,539,838
Index (1943 = 100)	135.95	100.00	133.37	100.00	137.55	100.00

Operator	Express carried (pounds) January-November		Express pound-miles flown January-November		Passenger seat-miles flown January-November		Revenue passenger load factor (percent) January-November	
	1944	1943	1944	1943	1944	1943	1944	1943
All American Aviation, Inc.	133,956	139,765	20,400,829	19,060,382	0	0		
American Airlines, Inc.	20,659,479	19,030,666	9,620,444,514	8,879,201,669	576,590,191	455,634,081	90.15	88.21
Brantiff Airways, Inc.	1,208,169	1,284,708	563,998,165	648,523,291	94,806,002	66,349,701	90.41	91.85
Chicago & Southern Air Lines, Inc.	991,388	787,416	416,492,174	342,120,569	54,132,789	38,779,240	83.58	83.98
Continental Air Lines, Inc.	182,744	108,033	73,795,366	37,700,750	24,331,303	15,877,102	88.37	86.87
Delta Air Corporation	853,318	548,837	312,819,127	211,025,084	65,512,432	44,189,686	91.09	88.71
Eastern Air Lines, Inc.	5,223,032	4,078,821	3,086,680,133	2,497,315,145	279,936,269	226,451,802	86.22	87.25
Inland Air Lines, Inc.	47,551	23,437	9,746,905	5,406,371	9,266,001	5,568,429	70.51	65.75
Mid-Continent Airlines, Inc.	228,272	159,495	62,604,702	38,769,401	25,228,857	15,024,989	77.72	62.79
National Airlines, Inc.	364,759	306,273	126,125,671	89,423,230	41,310,331	24,116,959	87.60	86.22
Northeast Airlines, Inc.	120,725	106,034	23,895,420	21,592,017	19,266,692	13,585,442	60.74	60.48
Northwest Airlines, Inc.	2,063,764	1,391,668	1,110,825,727	904,636,663	127,757,208	67,897,578	85.15	83.75
Pennsylvania-Central Airlines Corporation	4,483,770	3,927,992	853,097,036	708,474,883	99,440,091	58,339,485	82.97	81.35
Transcontinental & Western Air, Inc.	12,263,457	9,754,320	6,427,276,143	5,509,280,784	347,784,453	250,126,230	92.01	89.53
United Air Lines, Inc.	9,969,818	9,536,325	7,718,724,462	7,176,516,908	434,371,819	353,934,148	96.12	91.95
Western Air Lines, Inc.	808,908	867,345	395,044,177	395,572,227	57,180,057	34,744,240	88.73	85.19
Total	59,603,110	52,051,135	30,821,973,551	27,484,619,374	2,256,914,495	1,670,639,112	89.86	88.07
Index (1943 = 100)	114.51	100.00	112.14	100.00	135.09	100.00	101.98	100.00
Colonial Airlines, Inc.	235,098	194,130	73,046,766	56,894,283	19,727,018	12,546,307	80.57	80.15
Hawaiian Airlines, Ltd.	6,563,809	5,417,275	1,012,572,016	855,434,919	15,323,928	15,044,384	93.98	93.69
Grand Total	66,402,017	57,662,540	31,907,592,333	28,396,948,576	2,291,965,441	1,698,229,803	89.76	88.06
Index (1943 = 100)	115.16	100.00	112.36	100.00	134.96	100.00	101.93	100.00

	January	February	March	April	May	June	July	August	September	October	November	Total
Passengers carried (unduplicated) (total revenue and non-revenue): <sup>1</sup>												
16 domestic airlines	242,683	221,011	251,445	272,273	311,829	326,878	371,972	400,904	394,491	420,839	399,096	3,613,421
Total airlines	265,001	231,809	262,347	283,899	324,275	340,961	387,674	419,838	409,868	436,934	413,342	3,765,948
Passenger miles flown (total revenue and non-revenue):												
16 domestic airlines	141,474,106	125,088,611	142,834,165	155,159,351	181,038,023	193,288,705	211,703,804	227,350,700	225,471,943	239,022,033	216,685,774	2,059,117,215
Total airlines	143,727,253	127,107,076	144,884,424	157,414,978	183,563,374	196,130,812	214,800,861	231,262,843	228,763,362	242,469,884	219,550,042	2,089,674,909

<sup>1</sup>Preliminary. Due to the delay in reporting by some companies, these figures are subject to revision in subsequent publications.

## Passenger Blamed

While giving a ride to Thurman Deviney, 40, Archdale, N. C., Pilot Samuel H. Saunders, 33, of High Point, N. C., lost control of the aircraft near High Point, and crashed with fatal injuries to himself and his passenger.

Saunders held a private pilot certificate and had flown approximately 253 hours solo.

Investigation revealed dual rudder controls were connected. One witness, who helped extricate the passenger, stated the passenger's left shoe was so tightly wedged between the dual rudder pedals the shoe had to be torn off before the body could be removed.

## Bong Bags Another

NEWS reports credit Major Richard Bong, a CAA trained pilot, with shooting down his thirty-ninth Jap plane over Negros Island Dec. 15 making him the leading air fighter of our forces.

Eight months ago, almost to the day, he got his twenty-seventh, and was advanced in rank from Captain to Major by General Douglas MacArthur.

## Instructor Killed

A simulated forced landing continued to an extremely low altitude ended in a crash four miles west of Stormville Airport, Stormville, N. Y., in which instructor Waldo B. Gellard, of Brooklyn, N. Y., was killed and his student, Joseph LaPorta, also of Brooklyn, received serious injuries.

Gellard held a commercial certificate and flight instructor ratings. He had accumulated about 2085 hours of flying time.

The student stated that they were practicing simulated forced landings, including slips, at the time of the accident.

## Tennessee Includes Aviation Training As State Function

Tennessee has established a division of Aeronautics Education in its State Department of Education, indicating the State's approval of the Civil Aeronautics Administration aviation program.

Charles H. Gilmore, formerly Coordinator of Civilian Pilot Training of the Naval Cadet program, and director of the program for training aviation teachers at Austin Peay State College, has been named director of the Division. Kenneth Newland, of the Aviation Education Service of the Civil Aeronautics Administration, is serving as consultant for the Division.

Objectives of the division, as announced by W. Percy McDonald, Chairman of the State Bureau of Aeronautics, which has financed many educational efforts in aeronautics throughout the State, are, in general, the promotion and coordination of aviation education in Tennessee.

**The Training Program.**—In particular, the objectives are:

To assist colleges in organizing and conducting programs for training of aviation teachers;

To assist high schools and colleges in obtaining equipment and instructional materials;

To arrange with the CAA for airport operations institutes at Memphis, Nashville, Chattanooga, Knoxville and Tri-city airports, to be attended by superintendents, teachers and principals of high schools;

To arrange for the visit of high school and college classes to five major airports in the state;

To develop a plan for extending aviation to more high schools;

To encourage the Civil Air Patrol cadet program;

To serve as a clearing house for ideas in aviation education, and to collect, evaluate and distribute aviation units of instruction which have been found to be successful;

And to evaluate available instructional aids, including reading materials, visual aids and laboratory equipment.

Fiske University, privately-endowed Negro university at Nashville, Tenn., and the Agriculture and Technical State College have cooperated in the purchase of Gillespie Airport at Nashville.

This is believed to be the first Negro University to own an airport, and is another indication of the wide interest in aviation education current in the Volunteer State. Five colleges in the State own their airports, and 10 others have airports under their control through lease. Most of these purchases have been assisted by the Tennessee Bureau of Aeronautics.

**Aviation Taught by Correspondence.**—Correspondence training of aeronautics teachers in Tennessee High Schools, financed by the Tennessee Bureau of Aeronautics, will be conducted by the Extension Department of the University of Tennessee.

Based on the success of programs in seven state colleges and universities in which nearly 300 "in-service" and student teachers have been given actual flight experience and training as aeronautics teachers, this new course will extend to all corners of the state so

(See Tennessee, next page)

## New Aircraft Design Bulletin

ANC-18 "Design of Wood Aircraft Structures" has just been completed and may be purchased from the Superintendent of Documents, Government Printing Office, Washington 25, D. C., for 75 cents a copy.

The CAA's Aircraft Engineering Division holds the chairmanship of the Army-Navy-Civil Technical Subcommittee on Wood Aircraft Structures which directed the preparation of the bulletin at the Forest Products Laboratory of the Department of Agriculture at Madison, Wis.

The present bulletin is a revision of the "ANC Handbook on the Design of Wood Aircraft Structures" which was prepared by the same groups. The bulletin provides information for use in the design of both military and civil aircraft.

## Fighters

(Continued from page 5)

these pests which cost the cattle raisers thousands of dollars a year. Wild horses can be driven and herded by air; antelopes, elk, and deer can be counted from air, and driven to new feeding grounds if it is advisable. Game animals, trapped by snow can be fed by air as part of the programs for conservation of game.

Forestry welcomes the airplane for many reasons. Flying fire patrols can keep close watch and report by radio at the first sign of fire. Parachuting fire fighters can be dropped to the burning areas quickly, often before the blaze gets out of control.

A new type parachute has been developed for jumping into the uninviting branches of high trees, rocky slopes, mountain sides, and thick forests. It has a 30 foot canopy for slower descent, and a quick release attachment for use when the jumper gets hung up high in a tree.

After the jumper is on the ground, the pilot drops another chute carrying fire-fighting tools, lamp, 2 days rations, first aid kit, water canteen, and other necessities. The jumper carries a "walkie-talkie" radio and gives the pilot a report of the fire's progress, what is needed to fight it, how many men are necessary, and other details.

More pilots will be needed for express freighting of perishable fruit, vegetables, and sea food. War freight planes, converted, may load tree-ripened citrus fruits in Florida, unload them a few hours later in New England, and return with some other product native to the Northern States. Middle Western restaurants will be able to serve Maine lobsters caught less than 24 hours before, or berries fresh from the northwest states. Experimental flight loads of such common vegetables as lettuce and spinach already have been flown more than a thousand miles, delivered, and sold at a profit. With a network schedule of flying freighters, refrigerated when necessary, the possibilities are enormous.

There is also the interesting possibility of quick-freezing foods at high altitudes during their delivery by air, for which equipment already has been designed, obviating the necessity for expensive equipment on the ground, and assuring garden-fresh food at tables 500 to 1,000 miles from the source.

## Burdens Puts Stress On Private Aviation

Importance of private flying and its bearing on peacetime development of the aviation industry is emphasized in a paper by Assistant Secretary of Commerce William A. M. Burden read before the National Aviation Trades Association at its St. Louis meeting.

Evidence of the Civil Aeronautics Administration's attitude toward private flying was disclosed as follows; the National Airport Plan; studies to make regulations governing private flying simpler and less hampering; development of a new civilian flight training program and establishing by local legislation state aeronautic commissions to deal with development and regulation as supplemental to activities of the National Government.

The bogeyman of Federal control was touched on in the following:

"Assuming that adequate provision is made for federal aid to airports and flight training, there are some who broadcast statements that the growth of personal flying will be strangled by federal regulations. I have no doubt that such statements are made in all sincerity, but I want to say as strongly as I know how that they represent loose and dangerous thinking.

"The men in the CAA and CAB concerned with safety regulation have the development of aviation close to their hearts. They have helped nurse civil aviation along from its starving childhood days to its present prosperous young manhood, and they have seen it through this critical war period. Most of them could be making twice their present salaries in private industry, for they had to pass rigid tests on their aviation knowledge and experience when they entered the government service, and they have acquired years of priceless background since."

## Car

(Continued from page 2)

student pilot to take his physical examination, and forward it to the central medical office in Washington. Routine procedure was for Washington to issue a formal denial of his eligibility. He then filed an appeal and was required to prove to a CAA inspector that he could safely take instruction, and should be granted a student permit. When he was ready for a private certificate, he made application, which was routinely denied. Having appealed, he would then arrange with a CAA inspector to take his flight test, which, if he passed it, would again be referred to the Medical division for final decision.

Pressure of work on CAA inspectors frequently has made it difficult for applicants to get in touch with them conveniently, so that this procedure often dragged out for months.

Under the revision now in effect, the CAA medical examiner in the field marks the applicant's medical certificate with the physical handicap from which he suffers, and the applicant goes directly to the flight inspector. The inspector is sole judge of whether he can fly safely, and his certificate is granted or refused on the basis of the flight test.



## War Planes for Carriers

Procedures for the release of planes by the military service to aircraft carriers is covered in Safety Regulation Instruction 190.

To speed up the expansion of aircraft carrier operations the following methods are established by 190:

Immediately upon receipt of advice in the Washington Office that additional aircraft have been allocated the air carrier or that the air carrier has been authorized to conduct operations over a new route, the Washington Office will advise the Air Carrier Branch Office of the region concerned. The Air Carrier Branch Office will contact the air carrier and discuss with him the proposed operation, with particular regard to any special problems which require a solution before authorization may be granted to conduct the proposed operation.

If the special problems involved can be handled within the region, the Branch Office will take necessary action, at the same time advising the Washington Office as to the nature of the problems and of the action taken. When the problems cannot be handled within the region, a full report will immediately be forwarded to the Washington Office, to permit the Washington Office to initiate corrective action. Included in such information should be a statement as to the date upon which the air carrier desires to initiate the proposed service.

Should the problems be of such nature a solution can be reached only through a waiver of certain provisions of the Civil Air Regulations by the Civil Aeronautics Board, the air carrier should be requested to prepare an application for such waiver.

Application for waiver should be addressed to the Civil Aeronautics Board, routed through the Branch Office concerned to the Washington Office Air Carrier Division together with their recommendations. The Washington Office will review both the application for waiver and the recommendations of the Branch Office and forward them to the Civil Aeronautics Board with any additional recommendations considered pertinent.

## Negligence Causes Crash

Instructor George William Funtig and Student Ejnar Johan Petersen were seriously injured when they took off with the elevator control cables reversed and crashed at Cleveland, Ohio.

Funtig, 37, of Cleveland, held a commercial pilot certificate and flight instructor ratings. He had flown 1800 hours. Petersen, 39, of Westlake, Ohio, held a student pilot certificate and had flown approximately 30 solo hours.

Ray Full, an aircraft and engine mechanic, made a periodic inspection, and signed for the work. Had he checked the work properly he would have discovered the elevator control cables were incorrectly installed. Had Instructor Funtig been more alert, he would have made certain before take-off that the controls were functioning properly.

While both the mechanic and the pilot were negligent in not properly checking the controls before take-off, the direct cause of the accident was improper installation of the elevator control cables.

## Administrator

(Continued from page 1)

This possibly will be four times that which is likely to exist for the transport airplane manufacturers. To obtain this result, a coordinated program must be actively advanced.

"Training of civilian pilots is a proper corollary of this kind of development," the Administrator believes.

Following a detailed study of the primary needs of American civil aviation, Mr. Wright described a plan for the future, indicating activities in fields heretofore not emphasized by the CAA.

**Fields of Activity.**—"In our opinion," he said, "the U. S. Government's civil aviation policy in the immediate postwar period should provide for the following:

The fundamental facilities necessary for the expansion of air transport; (a) an adequate and efficient system of conveniently located airports; and (b) modernized and expanded airway facilities.

The fundamental facilities which will aid in the development of private flying; (a) a large number of small airports conveniently located to population centers, both in the urban and rural areas of the country; (b) stimulus to the development of improved aircraft types; and (c) government assisted flight training.

Steps which will aid in the development of air-mindedness of our youth; (a) the provision of technical aviation information to our educational institutions; and (b) the encouraging of flight experience in our high schools and flight training in our colleges.

Steps which will enable us to take our proper place in the international aviation field; (a) by appropriate contacts with foreign government civil aviation agencies; (b) by training and informing foreigners in American aviation techniques; and (c) by assisting our aircraft manufacturing and transport industries in their expansion abroad.

**Contribution to Private Flying.**—Development of private aircraft for personal flying is a departure from recent CAA history, but it hearkens back to the successful effort of 1935 to awaken the public to the possibilities of such flying.

The CAA effort in that year to develop a popular private plane contributed to the production increase of light planes from two in 1933 to 436 in 1935, 889 in 1936, 1,523 in 1937, increasing to 4,455 in 1940. The present significance of such manufacture, Mr. Wright pointed out, is that it will give the country a new and important industry.

"Furthermore, the amount of flying involved will develop a large backlog of young Americans experienced in the air and in the associated occupations necessary to keep pilots and airplanes flying, all of which is important from the standpoint of national defense." It is imperative, he said, that appropriate plans be made for properly encouraging and fostering an industry with these potentials.

## Pilot and Passenger Killed

A spin which continued to the ground resulted in fatal injuries to Pilot Thomas Leo Mattern, 44, of Rochester, N. Y., and his passenger, Betty Pierce, of Bouckville, N. Y. The accident occurred near Colgate University Airport, Madison, N. Y.

Pilot Mattern held a commercial certificate and flight instructor ratings. He had flown 2009 hours.

## New Props and Engines

The CAA has approved the following new types of engines and propellers and added new models to previously type certificated engines and appliances. The approval numbers and dates of approvals are in parenthesis.

### New Types

#### Engines—

Continental, models C-75-8 and C-75-12; 4 cyl. horizontally opposed air cooled; 75 hp at 2275 rpm at sea level pressure altitude; weight (dry) 180 lbs. and 185 lbs., respectively. Model C-75-12 has provisions for electric generator and starter. (Type Certificate No. 233, 11-14-44)

#### Propellers—

Stone, models S65C, S65C-2, S65C-4, S65C-6; 72 in., 70 in., 68 in., 66 in. diameter, respectively; 56 in. to 46 in. pitch; 65 hp, 2350 rpm. (Type Certificate No. 808, 11-3-44)

Stone, models C65CC, S65CC-2, S65CC-4, S65CC-6; 72 in., 70 in., 68 in., 66 in. diameter, respectively; 57 in. to 29 in. pitch; 65 hp, 2350 rpm. (Type Certificate No. 808, 11-3-44)

Stone, models S65F, S65F-2, S65F-4, S65F-6; 72 in., 70 in., 68 in., 66 in. diameter, respectively; 50 in. to 42 in. pitch; 65 hp, 2350 rpm. (Type Certificate No. 808, 11-3-44)

Stone, models S65L, S65L-2, S65L-4, S65L-6; 72 in., 70 in., 68 in., 66 in. diameter, respectively; 44 in. to 34 in. pitch; 65 hp, 2350 rpm. (Type Certificate No. 808, 11-3-44)

### New Models

#### Engines—

The Aviation Corp., model Lycoming R-680-B4E (Military R-680-17); 9 cyl. radial air cooled; 225 hp at 2100 rpm at sea level; weight (dry) 512 lbs. (Type Certificate No. 108, 11-21-44)

#### Appliances—

Switlik, parachute models CC5-24S and CC5-26S; back pack; flat canopy type; 24 ft. and 26 ft. diameter, respectively; 19 lbs. to 22.5 lbs. weight; silk or nylon. (Type Certificate No. 151, 9-30-44)

Hayes, smooth contour wheels models 3650A and 3650M; 36 in.; approved static load per wheel 8200 lbs. (Type Certificate No. 101, 11-7-44)

Hayes, smooth contour wheels models 5600A and 5600M; 56 in.; approved static load per wheel 30,000 lbs. (Type Certificate No. 101, 11-7-44)

## Tennessee

(Continued from page 8)

that every high school might have available teachers trained in teaching aviation subjects.

The University also will conduct a "work shop" in aviation education in cooperation with the State Department of Education during the 1945 Summer School, where the study of teaching materials, teaching methods, and the formulation of a program of aviation education for the schools of the state can be accomplished.

Flight experience, similar to the 10 hours of instruction given the 300 teachers, will be included, with classes arranged for the convenience of "in-service" teachers during weekends, and at suitable times for students in training at normal schools. The subject matter taught by correspondence throughout the war will require no laboratory facilities and will be prepared and supervised just as other extension work of the university is now.

Nine hundred high school students in 50 schools throughout Tennessee are enrolled in the one-unit course in aeronautics.

Thirty-two of the 50 teachers were trained by the state in a summer program at the normal school at Clarksville.

**Part Schools Will Play.**—Aeronautics teachers have organized the State Association of Aeronautics with Eugene Bence, Whitehaven High School as President; C. H. Gilmore, State Director of the Aviation Education Division of the Department of Education as Executive Secretary, and Vice Presidents from each of the three sections of the state: Isma Chandler from East Tennessee, Jacob Shapiro from Middle Tennessee and J. P. Bradberry from West Tennessee.

## Airline Orders

## Service

No. 3287 by supplemental order permits consolidation of application of Norseman Air Transport with that of E. W. Wiggins Airways in New England Case. (Nov. 25)

No. 3288 rescinds order 3070 insofar as it includes Docket 1084; consolidates this Docket with the application of Northeast Airlines—Docket 1607—which requests consolidation of its certificates into a single certificate designated as route 27. (Nov. 25)

No. 3289 consolidates the applications of Wayne B. Lee, Hannaford Airlines, and Texas Motorcoaches, into the Texas-Oklahoma Case—Docket 337 et al; permits Department of Justice to intervene in the Florida Case. (Nov. 25)

No. 3290 permits State of Louisiana to intervene in the Florida Case. (Nov. 25)

No. 3291 permits Pan American Airways to inaugurate nonstop service immediately between Guatemala, Guatemala and Tegucigalpa, Honduras and between San Salvador, El Salvador, and Managua, Nicaragua, on Route FAM 5. (Nov. 25)

No. 3292 notifies TWA and Braniff that the national defense no longer requires delaying inauguration of service to and from Topeka, Kans. (Nov. 27)

No. 3293 permits TWA to inaugurate service to and from Topeka on Dec. 1 through the use of the Municipal Airport. (Nov. 27)

No. 3294 permits Braniff to inaugurate service to and from Topeka on Dec. 1 through the use of the Municipal Airport. (Nov. 27)

No. 3296 denies the City of Philadelphia permission to intervene in applications for certificates authorizing additional airline service in Mexico, Central and South America and the Caribbean. (Nov. 28)

No. 3297 grants Monadnock Region Association and the Port of New York Authority permission to intervene in The New England Case. (Nov. 28)

No. 3299 grants the City of Providence, R. I. and the White Mountain Region Association permission to intervene in The New England Case. (Nov. 29)

No. 3301 permits American Airlines to inaugurate on Dec. 1 nonstop service between Cleveland and Dayton, Ohio on Route 22. (Nov. 30)

No. 3304 approves interlocking relationships re application of Western Air Lines, L. H. Dwerlkotte, Charlie N. James, Thomas Wolfe, Paul E. Sullivan, J. J. Taylor and William A. Coulter; revokes order 3199 (Nov. 30)

No. 3310 dismisses from the proceeding known as The New England Case the applications for certificates of Peter Pickenly, Interstate Transportation Co., Cowell Coach Line and Milton, Leonard, and Hyman Schoenberg. (Dec. 1)

No. 3311 dismisses applications of Walters Air Lines and Clayton L. Palmer, doing business as Palmer Airlines, for certificates of convenience and necessity. (Dec. 15)

No. 3312 dismisses application of F. S. Willey Co. for approval under Sec. 408 of the Civil Aeronautics Act, or in the alternative, for the substitution of Northern Airlines in place of the Willey Co. for a certificate in the proceeding known as The New England Case. (Dec. 4)

No. 3313 orders that the portion of North American Airlines' application proposing service between Chicago and Green Bay be severed from Docket 1601 and assigned Docket 1687; consolidates applications of North American—Docket 1601, Northern Airlines and North Central Airlines with the proceeding known as the North Central Case. (Dec. 4)

No. 3328 rescinds order 1754 insofar as it authorizes EAL to suspend service temporarily between intermediate point Evansville, Ind. and the terminal point Nashville, Tenn.; temporarily exempts EAL from certain provisions of the ACT so that they may engage in air transportation to and from Evansville immediately; provides that this exemption shall terminate when Chicago & Southern inaugurates service at Evansville. (Dec. 14)

No. 3332 dismisses petition of the City of St. Paul for an order modifying certificates authorizing operations over Routes 26 and 48. (Dec. 15)

No. 3333 issues supplemental order of consolidation of applications of Automatic Air Mail and Fliteways in North Central Case. (Dec. 15)

No. 3334 denies TWA's petition for rehearing of the Board's opinion and order No. 3261; orders that this proceeding be reopened, however, at the Board's initiative, for further consideration on the issues of service to Wichita Falls and Lubbock as proposed in applications of American and Continental. (Dec. 15)

No. 3335 dismisses application of Eastern Air Lines for certificate in Florida Case. (Dec. 16)

No. 3336 dismisses application of Southwest Airways for approval of interlocking relationships. (Dec. 16)

No. 3337 dismisses application of Oklahoma air-

ways for approval of interlocking relationships. (Dec. 16)

No. 3338 permits the State of Conn. to intervene in The New England Case (Docket 399 et al) and denies The Hartford C. of C. leave to intervene in the same proceeding. (Dec. 16)

No. 3339 upon request of applicant dismisses request of Midwest Haulers for certificate of convenience. (Dec. 16)

No. 3340 order permits U. S. Maritime Commission permission to intervene in application of Northwest Airlines for certificate in North Atlantic Route Case. (Dec. 16)

No. 3341 denies application of National Airlines to provide non-stop service between Jacksonville and Miami, Fla. (Dec. 16)

No. 3342 upon request of applicant dismisses request of Braniff Airways for certificate to establish service on Route No. 9. (Dec. 16)

No. 3343 orders that Northwest be issued a certificate authorizing air transportation between the terminal points Minneapolis-St. Paul, Minn. and New York, N. Y., subject to certain conditions; amends Penn-Central's certificate for routes 55 and 32; amends UAL's certificate for route 1; denies applications of TWA, Colonial, Braniff, and Chicago and Southern for certificates. (Issued with an opinion. (December 16, 1944))

No. 3344 permits Continental Air Lines to establish non-stop service on Route No. 60 between Denver, Col. and Kansas City, Mo. 60 to begin Dec. 22. (Dec. 21)

## Miscellaneous

No. 3298 approves an agreement between 23 airlines relating to the issuance of passes. (Nov. 28). Alaska Airlines, All American Aviation, American Airlines, American Export Airlines, Braniff Airways, Inc., Chicago and Southern Air Lines, Colonial Airlines, Continental Air Lines, Delta Air Corporation, Eastern Air Lines, Inland Air Lines, Mid-Continent Airlines, National Airlines, Northeast Airlines, Northwest Airlines, Pan American Airways, Pan American-Grace Airways, Pennsylvania-Central Airlines, Transcontinental and Western Air, United Air Lines, Western Air Lines, Canadian Pacific Air Lines and Trans-Canada Air Lines.

## Airman Orders

## Revocations

No. 3282 revokes student pilot certificate of Preston Humphrey Bailey for landing in undesignated area; flying craft uncertified as to airworthiness and carrying passengers. (Nov. 23)

No. 3285 revokes student pilot certificate of Jack Doyle Bennett for making false entries in log book of solo flight time. (Nov. 21)

No. 3295 denies request of Lester G. Hipple for reinstatement of his flight instructor rating which was revoked by the Board on Sept. 8, 1944. (Nov. 28)

No. 3305 revokes Air-Traffic Control Tower Operator certificate and suspends commercial pilot certificate of John Cowan Baumberger. Suspension 90 days. (Dec. 1)

No. 3308 revokes student pilot certificate of Leonard Albert Willens for various acts which the Board finds amount to "carelessness and disregard for the life and safety of others." (Dec. 1)

No. 3309 revokes student pilot certificate of Henry Frank Kroening for acts showing "carelessness and disregard for life and safety of others." (Dec. 1)

No. 3314 revokes private pilot certificate of Steve Hawkins for flying too low; acrobatic maneuvers over congested area performed without parachute. (Dec. 5)

No. 3316 revokes student pilot certificate of Norbert Joseph Woelkers for flying with uncertified passenger. (Dec. 5)

No. 3318 revokes student pilot certificate of Melvin D. Root for flying too low. (Dec. 5)

No. 3326 revokes the commercial pilot certificate of Wilburn Glenn Allison for acts disclosing carelessness and disregard for the life and safety of others. (Dec. 12)

## Suspensions

No. 3284 suspends private pilot certificate of Leonard George Reuss Jr. for flying plane not in condition for safe operation. Suspension 30 days. (Nov. 24)

No. 3286 suspends student pilot certificate of Roscoe E. Magee for making two lone flights contrary to Civil Air Regulations and Civil Aeronautics Act. Suspension 90 days. (Nov. 21)

No. 3300 suspends student pilot certificate of Gordon Clark Smith for carrying a passenger other than certified instructor with dual controls connected. Suspension 60 days. (Nov. 24)

No. 3303 suspends private pilot certificate of Harold Henry Hoff for flying with control seats equipped with fully functioning controls, occupied and for operating an aircraft otherwise than in

accordance with rating limitations while carrying a passenger. Suspension 30 days. (Nov. 28)

No. 3306 suspends student pilot certificate of Lawrence Warren Andrews. Suspension, 6 months. (Dec. 1)

No. 3307 suspends private pilot certificate of Joseph Howard Wilcox for flying overloaded aircraft and making turns at excessive speed. Suspension, 15 days. (Dec. 1)

No. 3315 suspends student pilot certificate of John F. D. Ritter for flying too low. Suspension period 6 months. (Dec. 5)

No. 3317 suspends mechanic certificate of Joseph S. Fagan for passing for inspection planes on which repairs had not been made. Suspension period 30 days. (Dec. 5)

No. 3320 suspends airline transport pilot certificate of Roger Don Raelor landing at Stout Field Army Base when his destination was the Indianapolis Municipal Airport. Suspension period 10 days. (Dec. 5)

No. 3321 suspends student pilot certificate of Sewell Smoot Humphreys for not meeting physical requirements and flying too low. Order requires passing of medical examination and imposes 90 day suspension. (Dec. 8)

No. 3322 suspends student pilot certificate of Thomas Guy Brown for series of infractions and provides order remain in force until he has passed written examination and flight tests required for private pilot certificate. (Nov. 28)

No. 3323 suspends student glider pilot certificate of Joe Anne Hawkins for carrying passenger other than certified instructor. Suspension 15 days. (Dec. 8)

No. 3324 suspends student glider pilot certificate of Loren Glen Bright for taking off with another student glider pilot and checking turns made by another student glider although not qualified to do so. Suspension 60 days. (Dec. 8)

No. 3325 suspends student pilot certificate of Charles Albert Keeler for flying too low and performing acrobatic stunts at less than 1500 feet. Suspension 90 days. (Dec. 12)

No. 3327 suspends the student pilot license of Jacqueline Catherine Carnie for flying too low, carrying passenger and performing acrobatics. Suspension period, six months. (Dec. 12)

No. 3329 suspends student pilot certificate of Herbert F. Nolte for performing acrobatic maneuvers when not equipped with a parachute. Suspension, 10 days. (Dec. 15)

No. 3331 suspends private pilot certificate of Anthony Miller for flying in instrument weather, though not holding instrument ratings, in a plane not properly certified as to radio, and also piloted plane in instrument weather without having filed an approved flight plan. Suspension 90 days. (Dec. 15)

## Miscellaneous

No. 3283 issues order to show cause in the matter of Raymond L. Schilling, holder of student pilot certificate. Information has been presented to the Board indicating that Raymond L. Schilling, while the holder of student pilot certificate and while owner of aircraft, requested and permitted Preston Humphrey Bailey, holder of student pilot certificate to pilot aircraft and to carry Raymond L. Schilling as a passenger and the only other occupant of the aircraft.

It appearing to the Board that there is good cause to believe the above facts are true; it is ordered. That Schilling is directed to appear before an examiner of the Board and show cause why the student pilot certificate of Raymond L. Schilling should not be either suspended or revoked. (Nov. 22)

No. 3302 dismisses complaint against Cyrus Thompson Willock, holder of private pilot certificate, for alleged violations of Civil Air Regulations. (Nov. 30)

No. 3319 denies request of Jonas Weiland to amend order No. 3122 suspending his private pilot certificate. (Dec. 7)

No. 3330 dismisses complaint against Edward G. Mooney holder of mechanic certificate finding public interest does not require any action by the Board at this time. (Dec. 15)

## Regulations

Reg. 328.....Effective Dec. 8, 1944

Each person who is listed in the records of Parks Air College or one of its affiliated schools as a trainee in an experimental course of specialized dual flight instruction is hereby authorized to make one solo flight while holding an airman certificate consisting solely of a medical certificate issued by an authorized medical examiner of the Administrator showing that such person meets the physical standards prescribed in section 29.12 of the Civil Air Regulations: *Provided*, That (a) such person adheres to all the Civil Air Regulations except as above provided; (b) the name and address of each such person is submitted in duplicate

to the Civil Aeronautics Board prior to the solo flight; (c) the solo flight is made within sight of and under the personal supervision of a certificated flight instructor.

This Special Civil Air Regulation shall terminate January 15, 1945.

#### Amdt. 60-1.....Effective Oct. 20, 1944

60.71 *Acrobatics while carrying persons.* No person shall acrobatically fly an aircraft while carrying: (a) any other person or persons for hire, or (b) any other person seated at operative dual controls who is not the holder of at least a private pilot certificate.

Provided, That these provisions do not apply to the giving of instruction in acrobatic flying by a rated instructor.

#### Amdt. 60-2.....Effective Dec. 2, 1944

60.973 *Acceptable explosives and other dangerous articles.* Civil aircraft may be operated in flight carrying acceptable explosives and other dangerous articles as follows:

(a) "acceptable explosives" designated in part 5, § 654, of the Interstate Commerce Commission Regulations;

(b) "acceptable articles" designated in part 6, § 703, of the Interstate Commerce Commission Regulations;

(c) samples of lacquers, paints, and varnishes, having a flash point between 20° and 80° Fahrenheit, in quantities not exceeding one pint, when packed in friction-top cans, the tops to be soldered or fastened by indentations in not less than six places, cans to be surrounded with sawdust or other material in sufficient quantity to absorb all of the liquid, and packed in substantial fibre boxes;

(d) inflammable motion picture film when packed in accordance with the Interstate Commerce Commission Regulations, as amended to December 1, 1944.

#### Amdt. 60-3.....Effective Dec. 15, 1944

Effective December 15, 1944, Part 60 of the Civil Air Regulations is amended by striking §§ 60.95 to 60.953, inclusive, and inserting in lieu thereof the following:

60.95 *Emergency regulations*  
60.950 *Definitions.* As used in this section (60.95):

(a) The term "aircraft" means all aircraft other than those operated by scheduled air carriers, the United States Army or Navy, the Civil Aeronautics Administration, or the Civil Aeronautics Board.

(b) A "designated landing area" is an area designated by the Administrator as a regular base of operations for aircraft during the period of national emergency.

(c) A "local flying area" is an area in the vicinity of a designated landing area, including any channel leading thereto, recorded by the Administrator after coordination with all local interests, and with the defense commander if within a vital defense area, for non-exclusive use of local aircraft operations emanating from that designated landing area.

(d) A "vital defense area" is an area set aside by competent military authority within which the operation of aircraft is prohibited or is authorized only subject to prescribed conditions.

60.951 *Flight rules.* (a) Aircraft shall be based only at designated landing areas.

Notes: An aircraft is not prohibited from making an occasional take-off and landing from areas other than designated landing areas outside vital defense areas. This does not apply to military airfields, use of which by civil aircraft requires specific authorization by appropriate military authorities.

(b) No person shall pilot an aircraft within a vital defense area unless the flight has been approved by the responsible defense command or by the agency to which authority has been delegated for such approval: *Provided*, That approval is not required for flights from designated landing areas confined to the local flying area.

60.952 *Cancellation of designation.* The Administrator may, at any time, cancel the designation of a landing area if it is determined such action is necessary to public safety or to prevent conflict with military operations.

## Recent CAA Releases

Civil Aeronautics and the States—The Federal Viewpoint. Delivered by George W. Burgess, Assistant to Assistant Secretary of Commerce Burden, at Harrisburg, Pa. before Council of State Governments.

Paper prepared by Assistant Secretary of Commerce William A. M. Burden to be read before the National Aviation Trades Council.

## AIR REGULATIONS . . . As of January 1, 1945

TITLE	PART No.	PRICE		DATE LATEST EDITION		No. AMENDMENTS ISSUED	
		Part	Manual	Part	Manual	Part	Manual
Aircraft							
Airworthiness Certificates.....	01	\$0.05	None	10/15/42	None	1	
Type and Production Certificates.....	02	.05	None	3/1/41	None		
Airplane Airworthiness.....	04	.15	(1)	11/1/43	2/1/41	2	5
Engine Airworthiness.....	13	.05	None	8/1/41	None		
Propeller Airworthiness.....	14	.05	(1)	7/15/42	12/1/38		
Equipment Airworthiness.....	15	Free	\$0.10	4/15/44	7/1/38		
Radio Equipment Airworthiness.....	16	0.05	Free	2/13/41	2/13/41		1
Maintenance, Repair, and Alteration of Aircraft, Engines, Propellers, Instruments.....	18	.05	0.50	9/1/42	6/1/43		
Airmen							
Pilot certificates.....	20	.10	None	2/15/44	None	5	
Airline Pilot Rating.....	21	.05	None	10/1/42	None	3	
Lighter-than-air Pilot Certificates.....	22	.05	None	10/15/42	None		
Mechanic Certificates.....	24	.05	None	7/1/43	None		
Parachute Technician Certificates.....	25	.05	None	12/15/43	None		
Traffic Control Tower Operator Certificates.....	26	.05	None	2/1/44	None		
Aircraft Dispatcher Certificates.....	27	.05	None	10/1/43	None		
Physical Standards for Airmen.....	29	.05	None	6/1/42	None	2	
Air Carriers							
Air Carrier Operating Certification.....	40	.10	None	10/10/44	None		
Air Agencies							
Flying School Rating.....	50	.05	Free	11/1/40	12/40	3	2
Ground Instructor Rating.....	51	.05	None	12/15/43	None		
Repair Station Rating.....	52	.05	Free	10/1/42	2/41		
Mechanic School Rating.....	53	.05	(1)	8/1/42	5/40		
Parachute Loft Certificates and Ratings.....	54	.05	None	1/21/43	None		
Air Navigation							
Air Traffic Rules.....	60	.10	0.15	8/15/44	8/1/43	3	
Scheduled Air Carrier Rules.....	61	.10	None	2/1/44	None	2	
Foreign Air Carrier Regulations.....	66	.05	None	3/1/42	None		
Miscellaneous							
Definitions.....	98	.05	None	10/15/42	None		
Regulations of the Administrator							
Aircraft Registration Certificates.....	501	Free	None	3/31/43	None		
Recordation of Aircraft Ownership.....	503	Free	None	3/31/43	None		
Seizure of Aircraft.....	531	Free	None	12/8/41	None		

<sup>1</sup>Out of stock. <sup>2</sup>Special regulation No. 223. <sup>3</sup>Reprinted including amendments.

Notes: Those parts and manuals for which there is a price are obtained from the Superintendent of Documents, Government Printing Office, Washington 25, D. C. Remittances must be by cash or by money order, payable to the Superintendent.

## State Acts

(Continued from page 3)

ernment with aeronautical functions, but some do not. In some cases, the state has an independent aeronautics Commission; in others, aeronautics powers are assigned to other departments such as Highway or Public Utility Commissions. Some states provide for state regulation, some only for state development, some only for state promotion, and some for a combination of such functions, but with many differences and variations. Finally, some state aeronautic bodies are adequately supported and staffed and are active, while others are not.

**CAA Urges Safety.**—The CAA favors and, in fact, urges each State to adopt and enforce uniform safety regulations for aircraft operation, consistent with the Federal rules, and to assist in enforcing the Federal Requirement that everyone operating aircraft in the United States first obtain CAA certificates evidencing his competency as an airman and the airworthiness of the airplane.

The NASAO proposed aviation department act does not authorize state licensing of pilots or planes but does require state registration of federal certificates for airmen

and aircraft and authorizes the Commission to refuse to issue such registrations, or revoke registrations, upon finding the airman is incompetent or the aircraft unairworthy, according to Federal standards. Charges for such registrations may be fixed by the states but may not be more than \$1 for each certificate, and provision is made for important exceptions to this requirement. These include: non-residents; aircraft owned by non-residents; airmen and aircraft licensed in a foreign country with which the U. S. has a reciprocal agreement; airmen and aircraft engaged in interstate commercial flying; airmen operating military, government owned and foreign aircraft; and model aircraft operators and student pilots.

Largely responsible in the development of these uniform law proposals are Sheldon B. Steers, Director of the Michigan Board of Aeronautics and new President of the NASOA, Les Schroeder, Commissioner, Minnesota Department of Aeronautics, William L. Anderson, Director of Pennsylvania, Aeronautics Commission, William Green, Deputy Attorney General, State of Minnesota, Arthur Tully, Director of Massachusetts Aeronautics Commission and Frank Bane and Hubert R. Gallagher of the Council of State Governments.



## Airport Supervisors Getting Ready For the Rush



Standing left to right: J. B. Bayard, Jr., Chief, Planning and Survey Division, Airport Service, Washington; H. Harvie Perkins, Supervisor of Airports, Region 2, Atlanta, Ga.; John M. Hunter, Jr., Chief, Contracts and Legislation Unit, Airport Service, Washington; Edgar Smith, Urban Planning Consultant, Airport Service, Washington; S. E. Travis, Jr., Supervisor of Airports, Region 4, Ft. Worth, Texas; Herbert H. Howell, Supervisor of Airports, Region 5, Kansas City, Mo.; A. H. Wessel, Supervisor of Airports, Region 1, New York City; Leslie C. Vipond, Asst. Chief, Airport Lighting Unit, Airport Service, Washington; Harold E. Horner, Supervisor of Airports, Region 3, Chicago; Paul Stafford, Senior Airport Engineer, Airport Service, Washington; Joseph Yarrow, Turf Engineer, Airport Service, Washington; C. Raymond Seybold, Chief, Airport Lighting Unit, Airport Service, Washington; Kenneth S. Perry, Chief, Project Review Unit, Airport Service, Washington; George R. Borsari, Airport Liaison Officer, Airport Service, Washington.

Seated, left to right: George Burgess, Assistant to Assistant Secretary of Commerce, Washington; Phillips Moore, Chief, Engineering and Construction Division, Airport Service, Washington; Charles B. Donaldson, Director of Airports, Washington; R. W. F. Schmidt, Supervisor of Airports, Region 6, Santa Monica, California; Lane W. Wilcox, Supervisor of Airports, Region 7, Seattle, Wash.

### Management Booklet On Airports Issued

The first of a series of booklets on Airport Management is issued by the Civil Aeronautics Administration may be obtainable from the Superintendent of Public Documents, Government Printing Office, Washington 25, D. C., for 10 cents a copy.

The publication covers operation of airports as public institutions, financing municipal airports, revenue producing possibilities, accounting system and analysis of operating charges.

#### Expansion

(Continued from page 1)

training in Mexico and Brazil, and in the latter country also assisted in air traffic control work. Technical advice was given to missions from the Soviet Union, Australia, United Kingdom, and many other countries.

War emergency restrictions on flying were eased considerably outside of vital defense areas, and the boundaries of those zones were narrowed greatly.

The CAA program of assisting the development of aviation education in the elementary and high schools won for Dr. Edgar Fuller the Brewer Trophy, awarded annually for outstanding work in this field.

The CAA has during the year continued to make "winning the war" its number one purpose; it has commenced some transition period activities; and it has planned extensively for the expansion of civil aviation in all its phases—air transport, scheduled and nonscheduled; private flying; airports; education; foreign operations and technological improvement.

### Peacetime Problems Theirs

WITH the nation talking about airports and postwar increases in flying activity, the meeting of the Civil Aeronautics Administration Supervisors of airports in Washington recently, was especially important.

Whatever the pattern of future airport development, these men, from all parts of the United States, will be centers of information, advice, and technical information in their regions. They will distribute the scores of publications available through the CAA on all details of airport design and construction, advise with municipal and state officials concerned with airport location and construction, and participate in whatever national program is authorized later by Congress.

### To License Military Fliers

The Civil Aeronautics Board has amended the Civil Air Regulations so a rated military pilot while on active duty may obtain a civil pilot's certificate on a competence basis. The amended regulation insures the qualifications of the pilot for the rating sought are at least the equivalent of those required by CAR. The Board has also approved the issuance of civil pilot certificates on a similar basis to the Women's Air Force Service Pilots.

### Rationing Regulation For Civil Aviation Gas

Civilian gasoline of 86 octane number and below, rationed by the Civil Aeronautics Administration, will be delivered only into tanks of aircraft and aircraft engine test standards. All such gasoline when used for other purposes than those specified, continues to be rationed by the Office of Price Administration and requests should be made to that agency.

Allocations are made by the CAA to the following only:

Airport dealers, dispensing gasoline into tanks of aircraft or aircraft engine test stands;

Bulk-consumers, such as flight agencies who maintain their own storage capacity and servicing equipment for delivery of gasoline into their own aircraft tanks, for resale to other aircraft and for delivery into tanks of aircraft engine test stands.

Miscellaneous bulk-consumers, such as: (a) Individual aircraft owners who base their aircraft on a waiver at other than designated landing areas and who maintain their own storage capacity; (b) Corporations who own aircraft and service such aircraft from their own storage capacity; (c) Repair Shops having storage capacity for gasoline and deliver such fuel into the tanks of aircraft engine test stands; and (d) Crop dusting operators whose deliveries must be made at the scene of their dusting operations.

Other bulk-consumers such as aircraft engine manufacturers and aircraft manufacturers.

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